Section 4: Drills

◇ Fire Drill:

Initial notifications	Familiarity with duties	Space isolation
General alarms / signals	Familiarity with equipment	Smoke control
Crew response	Fire pumps started	Communications w/ bridge
Properly dressed / equipped	Two jets of water	
Language understood by crew	Fire doors and dampers	

(SOLAS 74/78 III/18.3; MSM Vol. II/22.C.7.i; NVIC 6-91)

Location: _____ Time on Scene: _____

Notes: _____

◇ Abandon Ship Drill:

General alarms / signals	Familiarity with duties	Boat operation
Muster lists	Provide equipment	Egress procedures
Muster of crew	Familiarity with equipment	Davit-launched liferaft drill
Crew response	Lower lifeboat	Communication w/ bridge
Language understood by crew	Brake operation	Lighting
Lifejackets	Engine start	

(SOLAS 74/78 III/18.3; MSM Vol. II/22.C.7.h)

Location: _____ Time to Water: _____

Notes: _____

☐ Oily-water separating equipment, bilge alarm, and bilge monitor — MARPOL Ax. I/16, 33 CFR 155.380

- Alarm, recorder
- Standard Discharge Connection — 33 CFR 155.430
- Coast Guard approval number 162.050, or meets IMO Resolution A.393(X)

☐ Cargo monitor and control — MARPOL Ax.I/16, 33 CFR 157.12

- Operation (automatic and manual)
- Means to stop discharge
- Indicators
- Recording devices

☐ Marine sanitation device

- Type (I, II, or III) — 33 CFR 159.7
- Nameplate — 33 CFR 159.55
- Placard — 33 CFR 159.59

Machinery Spaces:

☐ Main and auxiliary machinery installations

- General housekeeping — SOLAS 74/78 I/11(a)
- Fire hazards
- Shock and electrical hazards — SOLAS 74/78 II-1/45.1
- Personnel hazards (moving parts not protected, hot surfaces, etc.) — SOLAS 74/78 II-1/26
  - Leaking fuel oil piping or fittings
  - Sea chests, sea valves / spool pieces in good condition
- Tank tops and bilges free of oil — SOLAS 74/78 II-2/15
- Watertight doors — SOLAS 74/78 II-1/23
  - Hand / power operation
  - Local / remote control
  - Alarm

☐ Steering gear machinery — SOLAS 74/78 II-1/29

- Linkages
- Hydraulic leaks
- Ram guides
- Lubrication

Notes: _____

○ Company's training program conducted in accordance with STCW — STCW I/14

NOTE: *Documented procedures established to ensure new personnel and personnel transferred to new assignments are given proper familiarization with their duties.*

- Proper documentation
- Training conducted before crew is assigned shipboard duties
- Essential instructions are documented and provided before sailing

○ Crew familiar with SMS issues

- Ship's officers
  - Documented procedures
  - Preventative procedures for essential equipment
  - Reporting requirements for non-conformities and able to identify typical scenarios that may result in a documented non-conformity
- Master and chief engineer familiar with internal audit procedures (e.g., know how many audits required per year and have participated in at least one) in addition to requirement's for ship's officers

○ Documented maintenance system

- Documented in writing and computerized versions
- Readily available and in language understood by those who use them
- Procedures are followed
- Records maintained

○ Vessel-specific procedures are documented in writing and address the following areas:

NOTE: *Not mandatory that they follow the exact format listed below.*

- Preventative maintenance
- Navigation
- Bunkering operations
- Emergency preparedness
- Pollution prevention
- Technical procedures
- Communications

Notes: _____

☐ Pyrotechnics (spot-check) — SOLAS 74/78 III/6.3
- 12 distress flares

☐ Immersion suits and thermal protective aids (spot-check) — SOLAS 74/78 III/27.3
- Condition — SOLAS 74/78 III/19.2
- Retro-reflective material — SOLAS 74/78 III/30.2.7

Fire Protection:

☐ Fire control plan — SOLAS 74/78 II-2/20
- Permanently exhibited
- Language of flag state
- Copy permanently stored in weathertight container outside deckhouse

☐ Fire doors (spot-check) — SOLAS 74/78 II-2/46, SOLAS 74/78 II-2/47
- Machinery space and stair towers
- Not tied or blocked open
- Installed closure devices working

☐ Fire detection systems (spot-check)
- Smoke / fire alarms — SOLAS 74/78 II-2/13
- Remote pull stations — SOLAS 74/78 II-2/11.8
- Smoke / flame / heat detectors and sensors — SOLAS 74/78 II-2/53

☐ International shore connection — SOLAS 74/78 II-2/19

☐ Means of escape from accommodation, machinery, and other spaces — SOLAS 74/78 II-2/45
- Two required (some exceptions)
- Dead end corridors

☐ Portable fire extinguishers (spot-check)
- Good condition / available for immediate use — SOLAS 74/78 II-2/21
- Located on stations
- Serviced at periodic intervals — SOLAS 74/78 II-2/6.5

Notes: _____

○ Lights, shapes, and sound signals — 72 COLREGS
- Navigation lights
- Sound signals
- Distress signals

○ Radio log — SOLAS 74/78 IV/17

○ Radio operation — SOLAS 74/78 IV/7
- Transmit on 2182 MHz and Ch. 6, 13, 16, 70

○ INMARSAT communications — SOLAS 74/78 IV/7.1.5

Cargo Operations:

○ Human Factors: determine if personnel are familiar with the following items: — STCW Table A-II/III
- Hazardous material regulations — 49 CFR 176.57
- Special requirements (e.g., loading, segregation, firefighting equipment, etc.) for particular cargoes
- Dangers posed by the cargo
- Measures to be taken for cargo emergencies

Lifesaving Equipment:

○ Lifeboats/liferafts/rescue boats
- Ensure effective operation of winches, davits, falls, sheaves, etc. (Lower at least one lifeboat to the water.) — SOLAS 74/78 III/19
- Test lifeboat and rescue boat flemming gear and/or engines
- Verify presence/condition of lifeboat equipment — SOLAS 74/78 III/41
- Retro-reflective tape
- Lighting — SOLAS 74/78 III/11.4

Notes: _____

☐ Piping systems

- Connections — 33 CFR 156.130
- Equipment tests and inspections — 33 CFR 156.170
- Date of last cargo piping hydrostatic test

☐ Bulk hazardous solids operations

- Stowage conditions observed — 46 CFR 148.03-11
- Special additional requirements — 46 CFR 148.04
- Additional requirements of special permit — 46 CFR 148.01-11

☐ Vapor control system — 33 CFR 156.120(aa), 46 CFR 39.10-13(d)

- Vessel TVE endorsed for specific cargoes

☐ Pumping, piping, and discharge arrangement — 33 CFR 157.11

☐ Designated observation area — 33 CFR 157.13

☐ Cargo tank ventilation — SOLAS 74/78 II-2/59.1

Lifesaving Equipment:

☐ Lifeboats / rescue boats

- Required number — SOLAS 74/78 III/26
- Hull integrity and fittings — SOLAS 74/78 III/19.2
- Engine starts

Stbd Lifeboat	Port Lifeboat	Lifeboats
Engine equipped	Engine equipped	Wooden
Engine tested	Engine tested	Fiberglass
Lifeboat lowered	Lifeboat lowered	Steel
		Covered
Free fall lifeboat with rescue boat		

☐ Davit system — SOLAS 74/78 III/19.2, SOLAS 74/78 III/48

- Structure and foundation
- Roller tracks
- Lubrication (evidence of use)
- Falls; end for end / renew (2.5 / 5 years)
- No obstructions to lowering

Notes: _____

○ Paint lockers and flammable liquid lockers protected by an appropriate fire extinguishing arrangement — SOLAS 74/78 II-2/18.7

○ Fixed fire extinguishing arrangements in cargo spaces for vessels ≥ 2000 GT — SOLAS 74/78 II-2/53.1

○ Special arrangements in machinery spaces — SOLAS 74/78 II-2/11

- Machinery space ventilating fans can be shut down from outside spaces
- All openings capable of being closed from outside machinery spaces
- Machinery driving forced / induced draft fans, oil fuel transfer pumps, and other fuel pumps fitted with remote shutdowns located outside space concerned

○ Firemen's outfits (spot-check) — SOLAS 74/78 II-2/17.3

- Two lockers
- Four outfits
- Protective clothing
- Helmet, boots, and gloves
- Lamp
- Axe
- Breathing apparatus and lifeline

Pollution Prevention:

○ Equipment

- Test automatic stopping device required for discharge — MARPOL Ax. I/10
- Segregation of oil fuel and water ballast systems — MARPOL Ax. I/14
- Oily residue tank (discharge arrangements, homogenizers, incinerators, etc.) — MARPOL Ax. I/17, 33 CFR 155.780
- Witness operational test of emergency shutdown

Notes: _____

Structural Integrity

NOTE: *Request records of Outstanding Conditions of Class. (Form or format may vary depending on classification society.) Conditions of Class may identify structural defects, wastage, etc. Conditions may also identify ships overdue for drydocking, repair or other required service.*

☐ Hull structure — ICLL 66 Reg. 1

- Frame pulling away
- Fractures in corners
- Holes in main decks
- Leaks / patching on ballast tanks
- Bulkheads / decks warped
- Excessive wastage

☐ Side shell, accessible structural members, decks, and superstructure — ICLL 66 Reg. 1

- Fractures, corrosion, wastage, pitting or damage to the extent that it may impair ship's seaworthiness
- Excessive doublers, postage stamp inserts, cement boxes or soft patches
- Welding burn marks or other evidence of recent repair work
- Load line marked in accordance with certificates — ICLL 66 Regs. 4 - 9
  - Hailing port
  - Name
- Railings

☐ Watertight/weathertight openings

- Watertight doors, gaskets, dogs — ICLL 66 Reg. 12
- Other openings (means of securing) — ICLL 66 Regs. 13 - 18
- Vents, air pipes and closing appliances — ICLL 66 Regs. 19 & 20

☐ Mid-body ballast tank externally examined — MSM Vol. II Ch. 21

Ground Tackle:

☐ Emergency towing arrangements (vessels ≥ 20,000 DWT only) — SOLAS 74/78 II-1/3-4

- Approved by Administration

Notes: _____

○ Steering gear alarms — SOLAS 74/78 II-1/29

- Low hydraulic oil
- Loss of power
- Loss of phrase
- Overload

○ Human Factors: determine if personnel are familiar with the operation of the following items — STCW Table A-III

- Emergency generator:
  - Actions necessary before engine can be started
  - Different methods by which generator may be started
- Stand-by generator engine:
  - Methods to start engine automatically or manually
  - Blackout procedures
  - Load-sharing system
- Steering gear:
  - Action needed to bring main and auxiliary into operation
  - Changing steering from automatic to manual and vice versa
- Bilge pumps:
  - Starting procedures for main and emergency bilge pump
  - Appropriate valves to operate
- Fire pumps:
  - Starting procedures for main and emergency fire pumps
  - Appropriate valves to operate

Notes: _____

◇ 9 GHz radar transponder (SART) — SOLAS 74/78 III/6.2, NVIC 9-93

- Vessels > 300 GT and < 500 require 1
- Vessels > 500 GT require 2
- Stowed so to be rapidly placed in survival craft, or stowed in survival craft

◇ Emergency source of power (radio) — SOLAS 74/78 IV/13

- Independent of ship's power system
- 1 or 6 hour time duration
- Battery system
- Battery charger

◇ NAVTEX — SOLAS 74/78 IV/7.1.4

◇ Radio installation — SOLAS 74/78 IV/6.2

- Safe installation
- Independent lighting
- Marked with call sign

General Health and Safety

☐ Accident Prevention and Occupational Health — COMDTINST 16711.12A, ILO 147

- Rails, guards, protective clothing and equipment, warning signs posted in crew work areas

☐ Crew accommodations — COMDTINST 16711.12A, ILO 147

- Habitable conditions
- Adequate lighting and ventilation
- Free of cargo and stores
- Individual berths

☐ Hospital space — COMDTINST 16711.12A, ILO 147

- Designated for ships ≥ 500 GT with 15 or more crew on voyage of more than 3 days
- Not used for stowage or berthing
- Properly operating toilet

Notes: _____

○ Proper operation of IGS audible and visual alarms

- High O_2 content of gas in IGS main
  - Activated at 8% concentration
- Low gas pressure in IGS main downstream of all non-return devices
  - Activated at 100mm (4 inches) water
- High gas pressure in IGS main downstream of all non-return devices
  - Blowers automatically shut down
  - Gas-regulating valves close
- Low / high water level or low flow to deck seal
  - Blowers automatically shut down
- Blowers discharge high temperature
  - Alarms activated at 150°F (65.6°C) or lower
  - Blowers automatically shut down
  - Gas-regulating valves close
- Failure of IGS blowers
  - Gas-regulating valves close
- Low water pressure or flow to flue gas scrubber
  - Blowers automatically shut down
  - Gas-regulating valves close
- High water level in flue gas scrubber
  - Blowers automatically shut down
  - Gas-regulating valves close
- Failure of power supply to automatic control system for gas-regulation valve and indicating devices for IG supply
- IG generator
  - Insufficient fuel supply
  - Failure of power supply to generator or control system for generator

Notes: _____

Section 3: General Examination Items

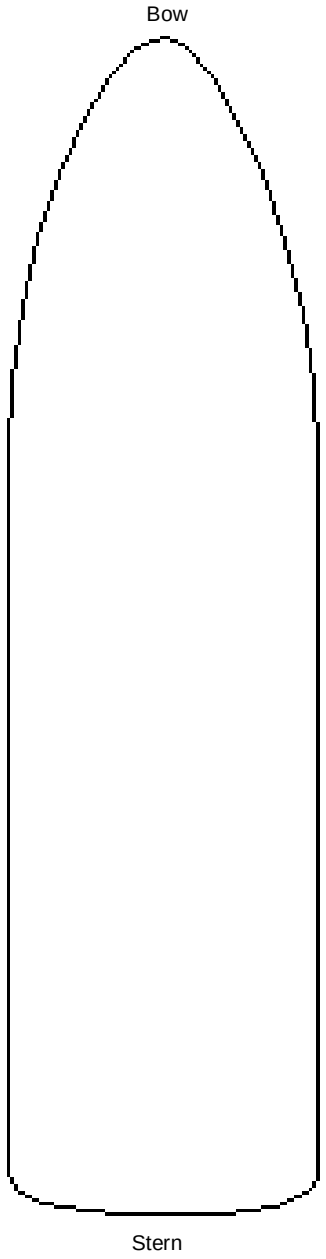
Navigation Safety:

- ☐ Charts and publications for US waters/ intended voyage — 33 CFR 164.33
  - Current and corrected charts
  - US Coast Pilot
  - Sailing directions
  - Coast Guard Light List
  - Tide tables
  - Tidal current tables
  - International Rules of the Road
  - Inland Rules of the Road
  - International Code of Signals
  - Plotting equipment — 33 CFR 164.35
- ☐ Radar(s) and ARPA — 33 CFR 164.35, 33 CFR 164.37, 33 CFR 164.38
  - 2 required if over 10,000 GT
  - Operate independently
  - ARPA acquires targets
- ☐ Compasses — 33 CFR 164.35
  - Illuminated gyrocompass with repeater at stand
  - Illuminated magnetic compass
  - Current deviation table
- ☐ Test electronic depth sounding device and recorder — 33 CFR 164.35
  - Accurate readout
  - Test all transducers
  - Continuous recorder (chart)
- ☐ Electronic position fixing device — 33 CFR 164.41
  - Location accurate

Notes: _____

Section 6: Appendices

Vessel Layout:



- Double hull / bottom / sides
- Ballast tanks (SBT/CBT)
- Tank arrangement
- Deckhouse location
- External / internal framing
- Layout of pumps – type

☐ Bridge log — 33 CFR 164.25, STCW 95 I/14

- Pre-arrival tests conducted
- Casualties (navigation equipment and steering gear failures reported) — 33 CFR 164.53
- Steering gear drills
- Emergency steering drills

☐ Exemptions to SOLAS certificates — SOLAS 74/78 I/4

☐ Cargo and ballast information manual — 33 CFR 157.23

Pollution Prevention Records:

☐ Current pollution prevention records

- Person-in-charge — 33 CFR 155.700
- Transfer equipment tests and inspections — 33 CFR 156.170
- Declaration of Inspection — 33 CFR 156.150

☐ Proper endorsements for cargo carried

IF vessel carries:	THEN it must have:	
NLS cargo	• An endorsement on TVE, AND • A list of authorized cargoes on TVE	MARPOL Ax. II NVIC 5-87
Category D cargo	• An NLS certificate, OR • An endorsement on TVE	33 CFR 157.35(c)
Category C oil-like cargo	• An attachment to IOPP certificate, OR • An endorsement on TVE	33 CFR 157.33
Category D oil-like cargo	• An attachment to IOPP certificate, OR • An NLS certificate, OR • An endorsement on TVE	33 CFR 157.35(d)

Notes: _____

Cargoes Requiring a Response Plan:

Type of Cargo	Name of Cargo		
Asphalt Solution	• Blending stocks	• Roofers stock	• Straight run residue
Animal Oils	• Tallow • Lard • Stearic acid	• Olive acid • Sperm oil	• Fish oil • Fish liver
Distillates	• Flashed feed stocks	• Straight run	
Easenal Oils	• Pinene	• Turpentine	• Dipentine
Edible Oils	• Corn • Coconut	• Soybean • Olive	• Cotton seed
Gasolines	• Automotive • Aviation • Casinghead	• Polymer • Straight run • Gas, oil cracked	• Akylates • Reformates
Naptha	• Aromatic • Cracking fraction • Heavy	• Paraffinic • Petroleum • Solvent	• Stoddard solvent • Varnish makers
Oils	• Clarified oil • Crude oil • Fuel oils [# 1 (Kerosene), # 2, # 2D, # 4, # 5, # 6] • Residual fuel oil • Transformer oil • Lube oil and blending stock	• Aromatic oil (excluding vegetable oil) • Mineral oil • Motor oil • Penetrating oil • Spindle oil • Turbine oil • Octene	• Olefin • Animal • Range • Residual • Resin • Road • White (mineral)

Name of Certificate	Issuing Agency	ID #	Port Issued	Issue Date	Exp. Date	Endors. Date
Cargo Ship Safety (CSS) No Change						
International Load Line (ILL) No Change						
International Oil Pollution Prevention w/Form B (IOPP) No Change						
International Tonnage (ITC) No Change						
Safety Management (SMC) No Change						
Document of Compliance (DOC) No Change						

Nonconforming Vessel. Any vessel failing to comply with one or more applicable requirements of U.S. law or international conventions is a nonconforming vessel. A nonconforming vessel is not necessarily a substandard vessel unless the discrepancies endanger the vessel, persons on board, or present an unreasonable risk to the marine environment.

Substandard Vessel. In general, a vessel is regarded as substandard if the hull, machinery, or equipment, such as lifesaving, firefighting and pollution prevention, are substantially below the standards required by U.S. laws or international conventions, owing to:

- The absence of required principal equipment or arrangement;
- Gross noncompliance of equipment or arrangement with required specifications;
- Substantial deterioration of the vessel structure or its essential equipment;
- Noncompliance with applicable operational and/or manning standards; or
- Clear lack of appropriate certification, or demonstrated lack of competence on the part of the crew.

If these evident factors as a whole or individually endanger the vessel, persons on board, or present an unreasonable risk to the marine environment, the vessel should be regarded as a substandard vessel.

Valid Certificates. A certificate that has been issued directly by a contracting government or party to a convention, or on the behalf of the government or party by a recognized organization, and contains accurate and effective dates, meets the provisions of the relevant convention, and corresponds to the particulars of the vessel and its equipment.

Call Sign	No Change (VFID)
Gross Tons	No Change (VFMD)
Built Date (use delivery date)	No Change (VFCD)
Overall Length (in feet)	No Change (VFMD)

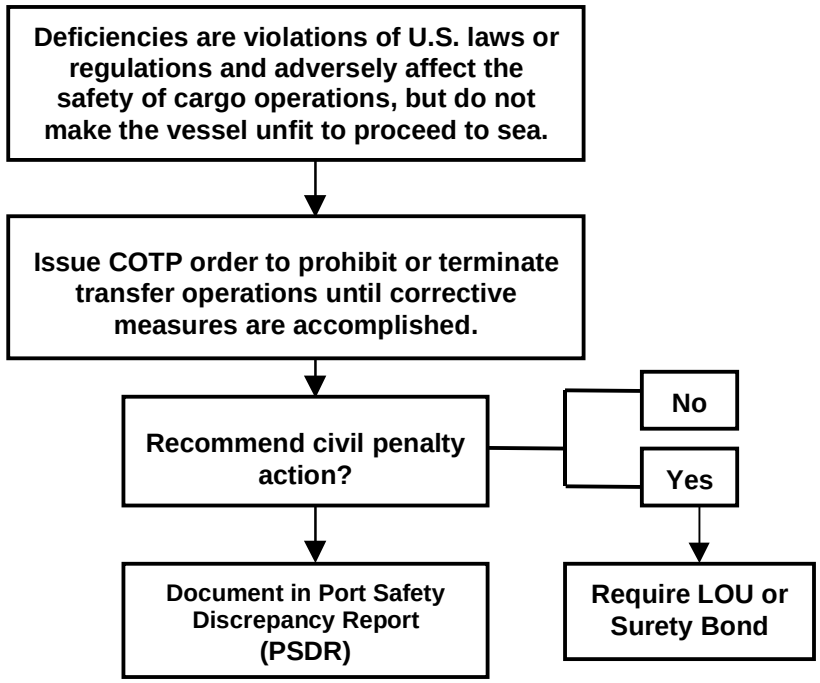
Vessel Description:

Crude Carrier — Oil / Bulk / Ore

Product Carrier — Other

Requiring Corrective Measures Prior to Cargo, Bunkering or Lightering Operations

(NO DETENTION)



Examples include the following:

- Oil transfer procedures incomplete.
- Information on properties and hazards of cargoes not on board.
- High and low level alarms inoperative.

Involved Parties & General Information:

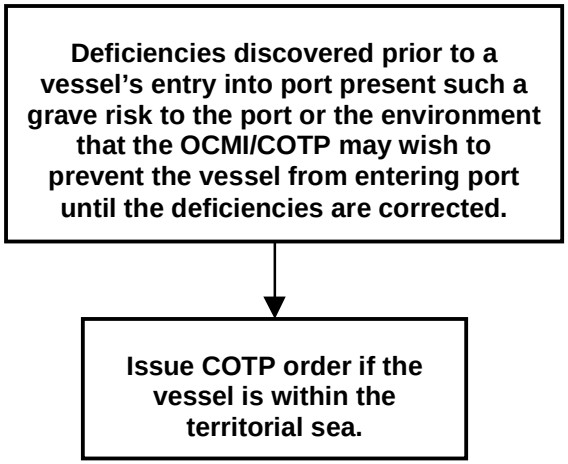
Owner's Agent
Individual
Phone Number

Charterer's Agent
Individual
Phone Number
Same as Owner's Agent

Owner—Listed on DOC or COFR
No Change

Operator
No Change

Requiring Corrective Measures Prior to Entry



Examples include the following:

- Leaking tanks.
- Carrying dangerous cargoes with expired documents.
- Carrying incompatible cargoes.
- Invalid ISM certificates.
- COFR not on board.

Table of Contents:

Notes:

Total Time Spent Per Activity:

Regular Personnel (Active Duty)			
ACTIVITY TYPE	ACTIVITY	TRAINING	(PERS) MI

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS

Reserve Personnel			
ACTIVITY TYPE	ACTIVITY	TRAINING	(PERS) MI

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS

Auxiliary Resources	
TOTAL BOAT HOURS	TOTAL AIRCRAFT HOURS

Conversions:

Distance and Energy

Kilowatts (kW)	X	1.341	=	Horsepower (hp)
Feet (ft)	X	3.281	=	Meters (m)
Long Ton (LT)	X	.98421	=	Metric Ton (t)

Liquid (*NOTE: Values are approximate.)*

Liquid	bbl/LT	m^3/t	bbl/m^3	bbl/t
Freshwater	6.40	1.00	6.29	6.29
Saltwater	6.24	.975	6.13	5.98
Heavy Oil	6.77	1.06	6.66	7.06
DFM	6.60	1.19	7.48	8.91
Lube Oil	7.66	1.20	7.54	9.05

Weight

1 Long Ton	=	2240 lbs		1 Metric Ton	=	2204 lbs	
1 Short Ton	=	2000 lbs		1 Cubic Foot	=	7.48 gal	
1 Barrel (oil)	=	5.61 ft = 42 gal = 6.29 m^3		1 psi	=	.06895 Bar = 2.3106 ft of water	

Temperature: Fahrenheit = Celsius (°F = 9/5 °C + 32 and °C = 5/9 (°F – 32))

0	=	-17.8	80	=	26.7	200	=	93.3
32	=	0	90	=	32.2	250	=	121.1
40	=	4.4	100	=	37.8	300	=	148.9
50	=	10.0	110	=	43.3	400	=	204.4
60	=	15.6	120	=	48.9	500	=	260
70	=	21.1	150	=	65.6	1000	=	537.8

Pressure: Bars = Pounds per square inch

1 Bar	=	14.5 psi	5 Bars	=	72.5 psi	9 Bars	=	130.5 psi
2 bars	=	29.0 psi	6 Bars	=	87.0 psi	10 Bars	=	145.0 psi
3 Bars	=	43.5 psi	7 Bars	=	101.5 psi			
4 Bars	=	58.0 psi	8 Bars	=	116.0 psi			